

<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/619,484	SASAKI ET AL.	
	Examiner	Art Unit	
	Vincent E. Kovalick	2677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to applicant's divisional patent application dated 7/16/03.
2.  The allowed claim(s) is/are 1-18.
3.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All b)  Some\* c)  None of the:
    1.  Certified copies of the priority documents have been received.
    2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

#### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_.
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_.

## DETAILED ACTION

1. This Office Action is in response to Applicant's Divisional Patent Application, Serial No. 10/619,484, with a File Date of July 16, 2003.

### *Allowable Subject Matter*

2. Claims 1-19 are allowed.

3. The following is an examiner's statement of reasons for allowance:

Relative to claim 1, the major difference between the teachings of the prior art of record ( USP 6,236,394, Ikeda and USP 5,113,181, Inoue et al.) and that of the instant invention is that said prior art of record **does not teach** a flat panel display device wherein at least one pumping circuit included in an external control circuit is arranged on said first substrate, and a first capacitor connected to a clock input portion of said pumping circuit and a second capacitor connected between an output portion and the ground are arranged outside said first substrate.

Regarding claim 4, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a pumping circuit comprising a first transistor having a first electrode region and a third electrode region, which are supplied with a power source voltage, and a second electrode region connected to a potential of a first intermediate node; a second transistor having a first electrode region supplied with a power source voltage, a second electrode region connected to a potential of a second intermediate node and a third electrode region connected to the potential of said first intermediate node; and a third transistor having a first electrode region connected to the potential of said second intermediate

node, and second electrode region connected to an output portion together with a third capacitor, and a third electrode region connected to the potential of said first intermediate node, wherein a first clock input portion for receiving a first clock signal through a first capacitor is connected to said first intermediate node, and a second clock input portion for receiving a second clock signal through a second capacitor is connected to said second intermediate node.

Relative to claim 7, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a pumping circuit wherein first and second transistors having opposite polarities are connected in series and two transistor pairs composed of the first and second transistors are connected in series.

Regarding claim 8, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a pumping circuit wherein first and second transistors having opposite polarities are connected in parallel and two transistor pairs composed of the first and second transistors are connected in series.

Regarding claim 9, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a pumping circuit comprising a first pumping circuit in which a first transistor of a first conductivity type and a second transistor of a second conductivity type are connected in series and two transistor pairs composed of the first and second transistors are in series connected; a second pumping circuit in which a first transistor of the second conductivity type and second transistor of the first conductivity type are connected in series, and transistor pairs composed of the first and second transistors are in series connected; and an operational amplifier which receives an output from

said first pumping ciucuit as a positive polarity power source and an output from said second pumping circuit as a negative polarity power source.

Regarding claim 18, the major difference between the teachings of the said prior art of record and that of the instant invention is that said prior art of record **does not teach** a flat panel display device wherein a control signal and a power source voltage are supplied from an external control circuit to said data drive and said scan drive, and wherein at least one pumping circuit included in said external control circuit is arranged in a region opposite to a region in which said scan driver on said first substrate is arranged.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U. S. Patent No. 6,236,394 Ikeda

U. S. Patent No. 5,113,181 Inoue et al.

***To Respond***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vincent E. Kovalick whose telephone number is 703 306-3020. The examiner can normally be reached on Monday-Thursday 7:30- 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Vincent E. Kovalick  
September 23, 2005

  
Ricardo Osorio  
PRIMARY EXAMINER